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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Toyoki UE et al. Prior Art Unit 2684  
Serial No.: 10/057,897 Prior Examiner A. Gantt  
Filed: January 29, 2002  
For: RADIO COMMUNICATION DEVICE AND METHOD OF  
CONTROLLING TRANSMISSION RATE

PETITION TO MAKE SPECIAL

Attention: Office of Petitions

Assistant Commissioner of Patents  
Washington, DC 20231

Sir:

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The Applicants respectfully petition that the above-captioned application be granted special status. The requirements of MPEP section 708.02(VIII) are complied with as follows:

(1) Please charge the petition fee set forth in 37 CFR 1.17(i) to Deposit Account No. 19-4375.

(2) All pending claims (claims 31-35) of the present application are believed to be directed to a single invention; if the Office determines that all the claims presented are not obviously directed to a single invention, the Applicants agree to make an election without traverse as a prerequisite to the grant of special status.

(3) Present claims 31-35 are in non-means-plus-function format and correspond generally to means-plus-function claims 46-50 of

Appln. No. 09/648,756. Accordingly, the most pertinent prior art known to the Applicants was cited and applied against the claims in the parent application and is discussed herein. This art was submitted in the present application in the Information Disclosure Statement filed January 29, 2002.

(4) Copies of each item of prior art deemed most closely related to the subject matter encompassed by the present claims are of record in the parent application; this prior art was cited in the present application in the Information Disclosure Statement submitted January 29, 2002, in compliance with 37 CFR 1.98(d).

(5) The following is a detailed discussion of the art mentioned in sections 3 and 4 above, pointing out how the instant claimed subject matter patentably distinguishes thereover.

In the parent application, an obviousness-type double patenting rejected was asserted in view of claims 34, 36, 38 and 39 of 09/648,757, a rejection under 35 USC 102(b) was asserted based on USPN 5,822,318 to Tiedemann Jr. et al., and rejections under 35 USC 103(a) were asserted based on (a) USPN 5,822,318 to Tiedemann Jr. et al. alone and (b) USPN 5,822,318 to Tiedemann Jr. et al. in view of USPN 5,483,676 to Mahany et al.

The Applicants respectfully submit that the present claims patentably distinguish over the prior art of record for at least the following reasons.

Claim 31 defines a transmission rate control apparatus which includes reception circuitry that receives a received quality measured at a communication terminal; and transmission rate control circuitry that changes a transmission rate to the communication terminal based on the received quality, wherein the transmission rate control circuitry decreases the transmission rate when the received quality at a side of the communication terminal deteriorates rapidly. Claim 32 depends from claim 31 and states that, after the transmission rate control circuitry decreases the transmission rate when the received quality at a side of the communication terminal deteriorates rapidly, the transmission rate control circuitry changes the transmission rate to an original value when the received quality at the side of the communication terminal subsequently improves. Claims 33 and 34 define a base station apparatus with a transmission rate control apparatus as in claims 31 and 32, respectively. Claim 35 defines a communication terminal apparatus comprising monitor circuitry that monitors a received quality; judgment circuitry that judges whether the received quality deteriorates; and transmission circuitry that transmits the received quality at a timing at which the judgment circuitry judges that the received quality deteriorates.

According to the present invention, it is possible to perform transmission rate control effectively when rapid received quality

deterioration occurs at the communication terminal, for example, due to shadowing.

In general, coding techniques in communications include channel codec and source codec methods. The technique of the present invention relates to the channel codec technique (coding with propagation path conditions considered). In other words, the present invention controls a transmission rate in the channel codec. As a result, the transmission rate control of the present invention is performed in relatively lower layers (around a data link layer in an OSI model). Therefore, the transmission rate control of the present invention is performed from a standpoint of controlling the rate of the transmission data; while decreasing the transmission rate causes delays, it maintains the data quality. In view of this, the transmission rate control of the present invention is suitable for packet transmissions allowing delays.

Tiedemann Jr. et al. disclose data rate control relating to speech coding. The Tiedemann Jr. et al. data rate control technique is performed from a standpoint of how to generate encoded data in frames of variable rate data using data repetition as shown in Figs. 2a-2f. The redundancy enables transmission power to be decreased without degrading link quality. The data rate is determined by the amount of redundancy, but the transmission rate

is not affected. Thus, Tiedemann Jr. et al. are not concerned with transmission rate, but rather redundancy rate.

It is submitted that the transmission rate control of the present claimed invention is completely different in technical features from the data rate control of Tiedemann Jr. et al. Specifically, in the present claimed invention, the data transmission rate is controlled with the data always being generated in the same way. In contrast, in Tiedemann Jr. et al., the transmission rate is always the same, but the generation of the data is controlled.

Further, it is noted that Tiedemann Jr. et al. fail to teach or suggest receiving a received quality measured at a communication terminal, and decreasing a transmission rate when the received quality at a side of the communication terminal deteriorates rapidly, as will be apparent from the following.

The Office Action at page 3, lines 11-13 states that Tiedemann Jr. et al. disclose reducing the data rate on a link to improve link quality. Col. 5, lines 39-53 of Tiedemann Jr. et al. discusses methods for determining if the data rate should be decreased:

"In the exemplary embodiment of controlling transmission power of the mobile station 50, some of the methods for determining that the transmission power of mobile station 50 should be increased or

that the data rate of mobile station should be decreased include:

- (a) base station detection of high frame error rate on reverse link;
- (b) mobile station detects its power is at a maximum for the reverse link;
- (c) base station detects that received power is low on reverse link;
- (d) base station to mobile station range is large; and
- (e) mobile station location is poor.

Conversely, some of the methods for determining that the transmission power of mobile station 50 should be decreased or that the data rate of mobile station may be increased include:

- (a) base station detection of low frame error rate on reverse link;
- (b) mobile station detects its power is lower than a threshold for the reverse link;
- (c) base station detects that received power is high on reverse link;
- (d) base station to mobile station range is low; and
- (e) mobile station location is good. "

Tiedemann Jr. et al. fail to teach or suggest a transmission rate control apparatus which includes reception circuitry that receives a received quality measured at a communication terminal. In the Tiedemann Jr. et al. system, there is no teaching of, *inter alia*, transmission from a first station to a second station, of a received quality measured at the first station.

Given the above shortcoming, Tiedemann Jr. et al., *per force*, further fail to teach or suggest any of the claimed subject matter

of a transmission rate control circuitry that changes a transmission rate to the communication terminal based on the received quality measured at the communication terminal, wherein the transmission rate control circuitry decreases the transmission rate when the received quality at a side of the communication terminal deteriorates rapidly and, after the transmission rate control circuitry decreases the transmission rate when the received quality at a side of the communication terminal deteriorates rapidly, the transmission rate control circuitry changes the transmission rate to an original value when the received quality at the side of the communication terminal subsequently improves.

Tiedemann Jr. et al. fail to teach or render obvious a communication terminal apparatus having monitor circuitry that monitors a received quality, judgment circuitry that judges whether the received quality deteriorates, and transmission circuitry that transmits the received quality at a timing at which the judgment circuitry judges that the received quality deteriorates. In the Tiedemann Jr. et al. system, there is no teaching of, *inter alia*, transmitting at a first station a received quality measured at the first station.

Mahany merely discloses that the mobile station evaluates the test pattern transmitted by the base station to determine whether

higher rate communication is possible. Thus, Mahany does not cure the deficiencies of Tiedemann Jr. et al.

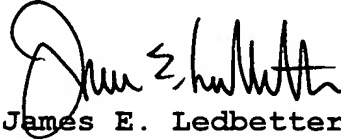
In view of the above-noted individual shortcomings of the references, it is submitted that even if the reference teachings were combined in some fashion, the result still would not have achieved or suggested the subject matter of the present claims. Thus, claims 31-35 are allowable over the teachings of Tiedemann Jr. et al. in view of Mahany, considered alone or in combination.

It is clear that the prior art of record, considered alone or in combination, fails to disclose or suggest the subject matter recited in present claims 31-35 as discussed above.

Therefore, in light of the foregoing discussion pointing out how the claimed invention distinguishes over the prior art of record, the applicants respectfully submit that the inventions of each of the independent claims and the claims dependent therefrom are not anticipated by the prior art of record and would not have been obvious over any combination thereof.

Grant of special status in accordance with this petition is respectfully requested.

Respectfully submitted,



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